Water models

• The models visualize phenomenon taking place inside a converter and ladle like steel slag flow and wearing of refractory materials.

• Air and CO₂ used as injection gases.

• Mixing measurements by pH, colour injection and electric conductivity methods.
Briquetting machine

- Agglomeration of fine metallurgical particles and recycling them back to process in a form of briquettes.
- Maximum pressure is 210 bar/briquette and vibration 60 Hz.
- Briquette size is 50mm in diameter and 100mm in height.
- Used for
  - Production of self-reducing briquettes
  - Production of sidestream-based slag former briquettes
  - Binder type and amount studies.
Inclusion electrolytic extraction

• Potentiostat Biologic SP-150 and a self-made cell is used in extraction of non-metallic inclusions in steel samples.
• Sample size up to 30g.
• Inclusions are then studied separately with FESEM, capable of particle size analysis and 3D observations.
Thermodynamic calculation software

- HSC, ChemSage and FactSage software are for thermodynamic equilibrium calculations.
- Process mass and energy balance analysis.
- Used for:
  - Determination of oxide melts (slags) solidus and liquidus temperatures.
  - Determination of stable inclusions compounds in molten steels.